

We claim:

1. A method of invoking protocol translation in a multicast network supporting first and second protocols, the method comprising the steps of:

detecting a first multicast request sent from a source host to a destination host using a first protocol;

sending, after a predetermined time, a second multicast request to said destination host using each of said first and second protocols; and

invoking protocol translation to facilitate communication between said source host and said destination host, if a reply to said second multicast request is received from said destination host using said second protocol and no reply is received from said destination host using said first protocol.

2. The method according to claim 1, wherein said reply received from said destination host using said second protocol is a unicast reply.

3. The method according claim 1, wherein said first and second protocols are each selected from the group of protocols consisting of Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6).

4. The method according to claim 1, wherein said protocol translation comprises the steps of:

generating a proxy address using said first protocol for said destination host; and

forwarding said proxy address to said source host.

5. The method according to claim 4, wherein said protocol translation comprises the further steps of:

creating an alias on a network interface at a translation mechanism in the multicast network; and

assigning said proxy address to said aliased network interface to enable said translation mechanism to detect and process packets addressed to said proxy address.

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6. The method according to claim 5, comprising the further steps of:

10 sending a unicast request from said source host intended for said destination host using said proxy address using said first protocol;

detecting said unicast request at said aliased network interface by said translation mechanism;

15 processing of said unicast request by said translation mechanism to determine an address for said destination host using said second protocol; and

forwarding said unicast request by said translation mechanism to said destination host using said second protocol to establish a connection from said source host to said destination host.

20 7. The method according to claim 6, wherein said translation mechanism is selected from the group of translation mechanisms consisting of a translator and a proxy.

25 8. The method according to claim 1, wherein said multicast network is a multicast domain name system network.

9. A system for invoking protocol translation in a multicast network supporting first and second protocols, said system comprising:

a network interface for communicating with said network;

30 a memory for storing information;

a processor coupled to said memory and said network interface;

and

a dual-stack host implemented using said memory and said processor detecting a first multicast request sent from a source host to a destination host using a first protocol, sending, after a predetermined time, a second multicast request to said destination host using each of said first and second protocols, and invoking protocol translation to facilitate communication between said source host and said destination host, if a reply to said second multicast request is received from said destination host using said second protocol and no reply is received from said destination host using said first protocol.

10. The system according to claim 9, wherein said first and second protocols are selected from the group consisting of Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6).

11. The system according to claim 9, further comprising:

a proxy mechanism coupled to said dual-stack host for generating a proxy address using said first protocol for said destination host;

wherein said dual-stack host forwards said proxy address to said source host.

12. The system according to claim 11, further comprising:

a translation mechanism having an aliased network interface addressed by said proxy address to enable said translation mechanism to detect and process packets addressed to said proxy address.

13. The system according to claim 12, wherein said translation mechanism is selected from the group of translation mechanisms consisting of a translator and a proxy.

14. The system according to claim 9, wherein said dual-stack host comprises:

a multicast domain name system application level gateway (mDNS-ALG).

15. The system according to claim 12, wherein said dual-stack host, said proxy mechanism and said translation mechanism are co-located in a node of said multicast network.

16. The system according to claim 9, wherein said multicast network is a multicast domain name system network.

17. A multicast system supporting first and second protocols, said multicast system comprising:

a transmission link supporting first and second protocols;

a plurality of host computing devices coupled to said transmission link, each of said host computing devices operating in accordance with at least one of said first and second protocols; and

a dual-stack host coupled to said transmission link and operable in accordance with each of said first and second protocols, said dual-stack host monitoring said transmission link for multicast requests, detecting a first multicast request from a source host computing device to a destination host computing device using said first protocol, sending a second multicast request to said destination computing device using each of said first and second protocols, and invoking protocol translation, when a reply from said destination host computing device is received using said second protocol and no reply is received from said destination host computing device using said first protocol; and

a proxy mechanism coupled to said transmission link, said proxy mechanism generating a proxy address for said destination host computing device using said first protocol to facilitate communication between said source host computing device and said destination host computing device.

18. The multicast system according to claim 17, wherein said first and second protocols are each selected from the group of protocols consisting of Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6).

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19. The multicast system according to claim 17, wherein said dual-stack host and said proxy mechanism are co-located.

20. The multicast system according to claim 17, wherein said multicast system is a multicast domain name system.

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